

DOCUMENT RESUME

ED 330 971

CG 023 314

AUTHOR Arch, Elizabeth C.
TITLE Sex Differences in Affect Efficacy, Task Efficacy, Anxiety and Willingness To Participate in a Performance Situation.
PUB DATE Apr 91
NOTE 11p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, April 3-7, 1991).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Anxiety; Graduate Students; Higher Education; Participant Characteristics; Performance; *Self Efficacy; *Sex Differences

ABSTRACT

This study investigated responses of men and women to simulated performance situations as a means of determining if affect efficacy relates independently to willingness to participate in such situations, and whether its effect differs by sex. Questionnaires were distributed to 178 graduate students at a small private liberal arts institution. The respondents were primarily teachers or prospective teachers, and the reason for the questionnaire was stated as a preliminary investigation for a larger project on the usefulness of a new teaching technique. Compared to men, the women consistently responded more negatively to the type of situation presented in the scenarios; women tended to be more anxious, less willing to participate, and less confident in their ability to come up with a usable idea. However, the differences between the women and men on these variables were small. The only variable for which the results showed a significant difference was affect efficacy. Both men and women imagined that they would be somewhat anxious under these conditions, yet women were less likely than men to cope with that anxiety. For both men and women, if they felt confident about their ability to cope with the task demands, they also tended to feel confident about their ability to cope with their own emotional responses, and to be willing to participate. (LLL)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED330971

Sex Differences in Affect Efficacy, Task Efficacy, Anxiety and Willingness to Participate in a Performance Situation

Elizabeth C. Arch
Teacher Education Program
Lewis and Clark College
Portland, Ore. 97219
(503) 768-7770

Paper presented at the Annual Meeting of the
American Educational Research Association
April, 1991

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☒ This document has been reproduced as
received from the person or organization
originating it.
☐ Minor changes have been made to improve
reproduction quality.

• Points of view or opinions stated in this docu-
ment do not necessarily represent official
OERI position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Elizabeth C. Arch

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Abstract

Building from Bandura's work on Social Cognitive Theory which finds self-efficacy beliefs to be an important determinant of human action, this paper postulates a new variable, affect efficacy -- the belief that one can cope with own's own affective responses -- as an additional determinant of willingness to participate in performance situations where there is risk of failure or negative evaluation. It also predicts that, given evidence of sex differences in response to such risk and in emotionality, affect efficacy will be a more important determinant of willingness to participate for women than for men. A questionnaire with a simulated performance situation was used to gather data from graduate education students on perceived level of anxiety, extent of affect efficacy, extent of task efficacy and willingness to participate. The results indicate that affect efficacy has a significant effect on willingness to participate for women but not for men. Implications for educational policy are discussed.

C6023314

Introduction

Of continuing concern in education is the difference between males and females in their participation in performance situations which are important avenues to opportunities in modern society. The basis for the difference seems less one of ability and more one of interest and motivation (Arch & Cummins, 1989). One condition which seems to characterize many of the situations where sex differences occur is the presence of risk (Block, 1983): performance situations involve risk of task failure and negative evaluation by others. In examining the factors which affect whether women and men are willing to participate in such situations, one of the most useful approaches comes from Social Cognitive Theory.

Theoretical Background

Social Cognitive Theory presents a model of human agency which allows for self-reflective, self-directive participation in the determination of personal action (Bandura, 1989). The research agenda arising from this theory has concentrated on the mechanisms which operate to produce action, emphasizing the importance of self-efficacy beliefs as they influence the affective, cognitive and motivational responses humans have to their environment. Particular attention has been paid to the role of self-cognitions in motivating participation in situations which may be personally risky. "Those who judge themselves as efficacious in managing potential threats, neither fear nor shun them. In contrast, those who judge themselves as inefficacious in exercising control over potential threats envisage their inept coping as producing scary outcomes and are unwilling to have any commerce with situations they believe exceed their coping capabilities (Bandura, 1988a, p. 93) That is, a sense of personal efficacy mediates between perception of threat and participation.

Self-efficacy, as initially conceived, referred to beliefs about the ability to control the environmental contingencies which are perceived as threatening, although there has been some controversy in the literature about the clarity of the conceptual basis for that

position (Kirsch, 1985). Subsequently, the idea has been extended to include perceived ability to control one's own "irrational apprehensive cognitions" (Bandura, 1988a, p. 89; Kent & Gibbons, 1987). These cognitions result from questioning one's ability to behave appropriately and complete a task, but they also feed back to enhance the sense of inefficacy and encourage avoidance of the situation. What is important here is that, in this case, the danger comes from inside: it is one's own cognitions which are threatening and need to be controlled.

The recognition of beliefs about ability to cope with potential threats from an internal source raises the possibility that there are beliefs about ability to cope with the potential threat of a strong affective response which may also play a role in willingness to participate in a stressful situation. Bandura (1988b) has found no direct relationship between anxiety and participation. However, there has been no attempt to investigate whether belief in one's ability to cope with the anxiety, at whatever level is aroused in the situation, is a factor in determining willingness to participate in a risky milieu. It seems likely that, in order to perform a task in a situation which may be anxiety arousing, people must feel that they are capable of performing the necessary actions, and that they can exercise control over both their own thoughts and their emotions so those personal responses do not become dysfunctional, interfering with performance or the task situation itself.

Social Cognitive Theory is a general theory of human action. It does not include in its formulation any basis for deriving differences between the operation of females and males. However, there are reported differences in the perceived level of anxiety felt by males and females in general and in response to threatening situations (Arch, 1987). There is evidence that females are less likely to view themselves as efficacious, particularly in certain types of task situations (Betz & Hackett, 1981), and even that, in the face of failure, the self-efficacy beliefs of females do not predict action (Bandura, 1988b). Given these inconsistencies, it seems imperative to explore the possibility that there are differences between the two sexes in the operation of the factors involved in motivation to participate. In addition, given the evidence for greater emotional responsiveness in females (Diener *et al.*, 1985), it is important to incorporate consideration of possible sex differences in any attempt to extend the role of efficacy beliefs to include the ability to cope with affective responses as well. The purpose of this study is to investigate responses of men and women to simulated performance situations as a means of determining if affect efficacy does relate independently to willingness to participate in such situations and whether its effect differs by sex.

Methods

Because the issue involved is how personal beliefs affect human action, a questionnaire study was designed to solicit perceptions of anxiety, affect efficacy, task efficacy and willingness to participate. 178 graduate students attending summer classes at a small private liberal arts institution in the Pacific Northwest responded to questionnaires distributed in their classes. The respondents were primarily teachers or prospective teachers, although there were some counselors, administrators and others attending the classes for general interest. 50 males and 108 females (89%) completed most questions and were included in the analyses.

The reason for the questionnaire was stated as a preliminary investigation for a larger project on the usefulness of a new teaching technique. In order to get grant money the researcher needed to indicate whether there was a pool of subjects who would be willing to participate under various reporting conditions, given the possibility of an anxious response to the experimental situation. Three scenarios that differed only in the number of people involved were presented on the questionnaire. Subjects were to imagine that they viewed a video about the new teaching technique and then went, by themselves, with two others, or with 7 others, to present their ideas for uses of that technique to the researcher. The form then asked for the subjects' responses to each situation in terms of willingness to participate, anxiety level, ability to cope with that anxiety, and perceived task efficacy in producing a useful idea for the teaching technique. At the end of the form subjects were asked to indicate whether they would actually be willing to be a subject for the subsequent study, their reasons for not being willing if they were not, and their name and phone number. Most questionnaires were filled out completely, indicating acceptance of the simulation.

The measures presented were all on a 10-point scale to parallel the scale used in most of the research on self-efficacy. The scales were labeled from NOT AT ALL to VERY for being willing, anxious, confident in being able to cope with the anxiety, and confident in ability to come up with a useful idea. For each subject, the responses to the three different scenarios were averaged to provide one score for each of the four variables. Analyses include comparison between women and men on response means, the correlations between the variables, and the effect sizes for affect efficacy, anxiety, and task efficacy on willingness to participate.

Results

The means and standard deviations for the variables by sex are given in Table 1.

Table 1: Means for the variable by sex.
(Standard deviations in parentheses below each mean)

	<u>Anxiety</u>	<u>Affect Efficacy*</u>	<u>Task Efficacy</u>	<u>Willingness</u>
MEN	4.5 (2.0)	8.0 (1.4)	6.6 (1.8)	6.0 (2.2)
WOMEN	4.9 (2.2)	7.3 (2.0)	6.2 (2.0)	5.7 (2.5)

* Difference between males and females significant at $p < .01$ one-tailed t-test

As would be predicted from prior research, the women consistently respond more negatively to the type of situation presented in the scenarios. They tend to be more anxious, less willing to participate and less confident in their ability to come up with a usable idea. However, the differences between the women and men on these variables are small. The only variable for which the results show a significant difference is affect efficacy. Both men and women imagine that they would be somewhat anxious under these conditions, yet women are less likely than men to be confident of their ability to cope with that anxiety.

To examine the relationships between the variables, zero-order correlation coefficients were calculated separately for the women and men. The results are presented in Table 2.

Table 2: Zero-order correlation coefficients for men and women

	<u>Anxiety</u>		<u>Affect Efficacy</u>		<u>Task Efficacy</u>	
	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>	<u>Men</u>	<u>Women</u>
<u>Willingness</u>	-.41**	-.19*	.48***	.56***	.52***	.51***
<u>Anxiety</u>			-.50***	-.36***	-.27*	-.06
<u>Affect efficacy</u>					.51***	.57***

* p<.05
 ** p<.01
 *** p<.001

For both men and women, if they feel confident about their ability to cope with the task demands, they also tend to feel confident about their ability to cope with their own emotional responses, and to be willing to participate. It is the relationships with anxiety where some sex differences appear. The only coefficient here which is not significant is the one between level of anxiety and task efficacy for women ($r = -.06$): how anxious women feel in the situations does not relate to whether they feel confident about performing the task. It is also apparent that, for women, level of anxiety is not as highly related to willingness to participate as it is for the men (women $r = -.19$, men $r = -.44$). In addition, to some extent level of anxiety is more likely to be separated from the ability to cope with it for women than men (women, $r = -.40$, men $r = -.54$). It appears that for women, anxiety is a response that is more likely to vary independent of other responses to a task situation.

Finally, to examine the independent effects of anxiety, affect efficacy and task efficacy on willingness to participate, multiple regression analyses were performed separately for each sex. Table 3 gives the beta coefficients for the effects of the three independent variables on willingness to participate.

Table 3: Beta coefficients for the regression of Anxiety, Affect Efficacy and Task Efficacy on Willingness to Participate

	<u>Anxiety</u>	<u>Affect Efficacy</u>	<u>Task Efficacy</u>	<u>R²</u>
MEN	-.22	.18	.37*	.37***
WOMEN	-.04	.38***	.29**	.36***

* p<.05
** p<.01
*** p<.001

36-37% of the variance in willingness to participate is accounted for by the three variables -- anxiety, affect efficacy, and task efficacy -- for both women and men. However, the impact of each variable is different for the two sexes. For the men, it is task efficacy which is the most important predictor of willingness to participate. While the level of anxiety appears to be more important for men than for women, the coefficient is not significant. Task efficacy is also a significant predictor for women. Yet, the coefficient is not as large as for men, and not as large as those for affect efficacy. Level of anxiety is not a predictor for women at all. Thus for women, their confidence that they can cope with their anxiety is the most important factor in explaining their willingness to participate in a performance situation.

Discussion and Conclusions

The variables measured here are obviously appropriate to exploring the decision-making process of men and women because they are highly related to willingness to participate in these simulated performance situations. In addition, the results clearly indicate that there are differences in the responses of women and men under even these circumstances. While imagining situations such as these may not be particularly potent or interesting for many of the respondents, the differences were quite apparent. There is no reason to believe that the impact of these factors would be any different if the decision-making were conducted under circumstances that the respondents would find more personally salient or would be facing in real life, only that the responses might be more dramatic. In other words, the differences which appear here under mild stimulus conditions, would be expected to be more substantial under more realistic conditions.

The indication that men respond more favorably in general to performance situations is not new (Lenney, 1977; Arch, 1987). Also the significant role of task efficacy in willingness to participate, and the lack of a significant role for anxiety substantiates previous work by Bandura (1988b). What is important here is the indication from the regression analyses that, while task efficacy is a significant predictor of willingness to participate for both males and females, the ability to cope with anxiety is important only for the women. In other words, the control of one's own affective responses appears to be a more important issue for females than males, having an independent effect on determining participation in certain task situations even if an individual is confident that she could be efficacious at the task. This is an important difference between the sexes in their responses to task situations.

Social Cognitive Theory postulates an active cognitive participation in determining human action. Self-generated influences must be included as contributing factors to that action. This study provides evidence that cognitive and affective responses are linked because there is a requirement to cope with one's affective responses in a stressful task situation so that they do not interfere with successful completion of the task. An important part of people's calculation in deciding to participate in a situation must be whether they believe they have the ability to handle their emotional responses under those conditions. This is a significant extension of Social Cognitive Theory.

In summary, when attempting to understanding the differences between men and women in their responses to task situations, it may be of especial importance to understand the role of a belief in one's ability to cope with one's affective responses. This study

indicates that such an ability is more in questions for women than for men, and that, for women, affect efficacy has a significant relationship to their willingness to participate. If the educational system is to continue to move towards encouraging both women and men to use their abilities to the fullest, acknowledgement of the role of affect efficacy in determining the responses of women may lead to more effective means of helping them to succeed at whatever tasks they chose.

References

- Arch, E. C. & Cummins, D. (1989). Structured and unstructured exposure to computers: Sex differences in attitude and use among college students. *Sex Roles*, 20, 245-254.
- Arch, E. C. (1987). Sex differences in response to evaluative stress: Anxiety, self-esteem, self-efficacy and willingness to participate. In: *Advances in Test Anxiety Research*, Vol. 5. Edited by R. Schwarzer, H.M. van der Ploeg, and C.D. Spielberger. Lisse, The Netherlands: Swets & Zeitlinger B.V..
- Bandura, A. (1989). Human agency in Social Cognitive Theory. *American Psychologist*, 44, 1175-1184.
- Bandura, A. (1988a). Self-efficacy conception of anxiety. *Anxiety Research*, 1, 77-98.
- Bandura, A. (1988b). Self-regulation of motivation and action through goal systems. In V. Hamilton, G.H. Bower, & N.H. Frijda. (Eds.), *Cognitive Perspectives on Emotion and Motivation* (pp. 37-61). Dordrecht, The Netherlands: Kluwer.
- Betz, N.E., & Hackett, G. (1981). The relationship of career-related self-efficacy expectations to career options in college women and men. *Journal of Counseling Psychology*, 28, 399-410.
- Block, J.H. (1983). Differential premises arising from differential socialization of the sexes: Some conjectures. *Child Development*, 54, 1335-1354.
- Diener, E., Sanvik, E. & Larson, R.J. (1985). Age and sex effects for emotional intensity. *Developmental Psychology*, 21, 542-6.
- Kent, G. & Gibbons, R. (1987). Self-efficacy and the control of anxious cognitions. *J. Behav. Therapy and Exper. Psychiatry*, 18, 33-40.
- Lenney, E. (1977). Women's self confidence in achievement settings. *Psychological Bulletin*, 84, 1-13.